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ABSTRACT

Perceptions of the aging process are of vital concern to the study of life span development. To investigate the effect of formal instruction about the aging process on students' perceptions, and to examine the relationship between performance on the Facts on Aging Quiz (FAQ) and respondent variables (age, sex, school rank and major, course participation, and performance), 122 predominatly female college students, evenly divided into either an experimental or a control condition, completed the FAQ before and after completing courses in human development. The experimental group participated in a course on human development from middle childhood to old age, including a weekly lecture, discussion group, or volunteer experience. The control group participated in a child development course with no reference to the adult aging process. An analysis of the results showed that for the experimental group, students' perceptions of the aging process became more accurate as a result of obtaining information about aging. Students in the control group showed no change in their perceptions of aging. All correlations between performance on the FAQ and respondent variables were not significant. To obtain full use of the FAQ as an educational assessment tool the content domain needs to be broadened to be more representative of generalized knowledge about aging. (BL)

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Measuring Change in Undergraduate Student's Perceptions about Aging Using The Palmore Facts on Aging Quiz

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Measuring Change in Undergraduate Perceptions on Aging Using the Palmore Facts on Aging Quiz

The Facts on Aging Quiz (FAQ), has 25 item true/false test proporting to measure the respondent's knowledge of factual information about aging, was introduced into the gerontological literature in 1977 by Erdman Palmore. The FAQ represented an improvement over its predecessors in three ways: it was shorter or took less time to complete; it differentiated facts from attitudes; it provided documentation supporting its scoring key. Edumetric rather than psychometric in its orientation (Palmore, 1978), five uses for the instrument have been recommended (Palmore, 1977): it can stimulate group discussion and clear up misconceptions about aging; it can identify the most common erroneous beliefs about aging; it can locate which groups have the most misconceptions about aging; it can serve as an indirect measure of attitudes or bias toward the aged and contribute toward understanding the relationship between knowledge about aging and attitudes toward the aged; it can be used to evaluate the effectiveness of lectures, courses, workshops, and other forms of training in gerontology.

Since 1977 there have been scores of different studies using the FAQ (Palmore, 1979; 1980). There appears, however, to be only a small number of published research studies which have employed the FAQ to assess intervention efforts in gerontological training (the fifth use listed above). Palmore (1980) reported that before and after tests usually show substantial improvements in scores after training in gerontology. For example, Youngman (as reported in Palmore, 1980) found that clergy, but not non-clergy, significantly improved (by five points) after a workshop on aging, and Leverson (as reported in Palmore, 1980) found that students enrolled in

a psychology class with a section on aging improved (by seven points). Blackwell (as reported in Palmore, 1980) reported a significant improvement among health professionals attending a workshop on aging, using eight of the FAQ items. Finally, Laner (1981) used a comparison group in two studies estimating the effects of attending a course on aging on FAQ performance. Both when students received direct feedback on how they did on the FAQ (study 1) and when they did not (study 2), their performance on a FAQ post-test administered 16 weeks later was significantly higher than comparison groups' performances even though groups were not significantly different from one another on the pretests. In short, it appears that the FAQ may be a useful tool in evaluative intervention research demonstrating changes in knowledge about aging as a result of training in gerontology.

Additional research is needed using Palmore's FAQ to evaluate the effectiveness of various forms of formal instruction about the aging process as well as well as research pertaining to the quiz itself. In the present study we attempted to contribute in both ways. We used the FAQ (Palmore, 1977) to estimate the impact of a life-span developmental psychology course on undergraduate students' knowledge about the aging process, and we examined the relationships between FAQ performance and a number of other variables including the respondent's age, sex, school rank and major, volunteer placement or discussion group selection, and students' performance on the course final exam items dealing with aging content. We expected that course participation would positively and significantly affect one's knowledge about aging and we further expected that scores on the FAQ would positively and significantly relate with students' performance on the final exam items dealing with aging. Hypotheses regarding FAQ scores and the remaining variables were left in the null form.

METHODS

Sample

The sample for this study consisted of 122 undergraduates at a large midwestern university. The experimental group included 61 students who were currently enrolled in a lecture course on human development which covered the segment of the lifespan from middle childhood to old age. The age of the group ranged from 18 to 44 years with a mean of 22.9 years. The sex distribution was 57 female and 4 male students. With regard to major field of study, 50.8% were nursing students, 18.0% were in home economic related areas of study, and 29.2% of the experimental group was distributed across several areas of major study, including behavioral disabilities, occupational therapy and other allied health fields. Thirty four percent were classified as second year students, 37.7% were third year, 21.3% were fourth year and 4.9% were classified as university special students enrolled in non-degree programs.

The course was structured in such a way that students, in addition to attending lecture once per week, either participated in a one hour discussion section once per week or engaged in some type of volunteer work with older children or adults of various ages for two hour periods once per week. The purpose of the volunteer experience was to offer students an opportunity to aquaint themselves with actual human developmental sequelae by observing human interaction in real life settings such as nursing homes, adult education programs, adolescent learning situations and similar programs which contain adults of various age levels.

The comparison group for the study was composed of 61 undergraduate students who were enrolled in a class in child development which did not include information on the adult years or the aging process. The age range

was from 18 to 39 years with a mean of 20.7 years. The sex distribution was 55 female and six male. The major area of study of these students was most heavily weighted in favor of the catagory labeled as "other" (68.9% of the sample), with nursing having 19.7% of the sample and home economic related subjects having 8.2%. Classification of students by year in school was distributed as 59% sophomore, 21.3% junior, 11.5% senior and the remaining 8.2% classified as "other" including university special students enrolled in non-degree programs. Table 1 profiles the demographic composition of the experimental and control groups.

Procedure

Experimental group -

The Palmore (1977) FAQ was administered immediately prior to presentation of lecture material which directly concerned the aging process (week 10 in the semester). The instrument was administered again a second time during the last class period prior to the final examination.

Comparison group -

The Palmore FAQ was administered to students enrolled in a child development course. The pretest was given midway through the semester and the posttest administered five weeks later. This time sequence parallels the pretest/posttest time differential for the experimental group. Sixty one matched pretest/posttest scores were randomly selected to form the control group.

RESULTS

Table 2 indicates the item by item percent of correct response for both the experimental and control groups, including total test mean percent correct responses. In terms of raw scores, for the experimental group the mean was 16.59 (S.D. 2.80) pretest and 18.62 (S.D. 2.85) posttest. For the comparison group the pretest mean was 16.36 (S.D. 2.58) and the posttest mean

was 17.06 (S.D. 3.32). A t-test was performed on the pretest/posttest total scores for the experimental group and found to be significant ($t(60) = -5.82$; alphs .05). The t-test performed on the corresponding comparison group data was found to be non-significant ($t_{60} = -1.77$; alpha .05). Correlations of age and final exam scores with pretest and posttest FAQ total scores for the experimental groups were found to be non-significant. Further analysis performed on these scores to determine the effects of major field of study, year in school, and gender revealed no statistically significant effects. Table 3 summarizes the raw score means and standard deviations pre-test and post-test for the experimental and control groups.

The subjects in the experimental group were subdivided into three groups: those students participating in volunteer work with elderly populations, those students participating in volunteer work with non-elderly populations and those students enrolled in discussion section. One-way ANOVA both on pretest and posttest scores for each of these three groups yielded non-significant results (all $p < .05$).

Age bias scores calculated for the experimental group. The pretest age bias score was -9.66, indicating a negative age bias. The posttest age bias score was -6.3 indicating that the entire sample remained biased against aging despite having received information on the aging process. A t-test was performed on these scores and revealed no significant change in bias against aging after having received information on adult development in later years.

Overall, age bias scores for the control group were less negative (-6) than for the experimental group. The t-test on the pretest/posttest age bias scores revealed no change in bias toward the aging process between the first and the second administration of the test...

Discussion

The results demonstrate that instruction leads to learning. As predicted, comparing pretest and posttest FAQ scores, students enrolled in a course on life-span developmental psychology from middle childhood to old age significantly outgained a comparable group of undergraduates attending a course in child development from birth to age six years. The results support the belief that people can learn from direct instruction, acquiring a more accurate, factual information base about aging and the aged as a result of specific instruction in gerontology. Moreover, since FAQ scores did not significantly correlate with other subject variables (age, set, rand, major), training effects can be considered in this study to be robust across these subject subgroupings. Although one may be disappointed in the magnitude of the effect found (the mean raw score difference between groups was only 1.5 points), the effects may also be viewed in a more positive light. That is, relating the present results to previous research (Palmore, 1980), our course in life-span developmental psychology can be said to have elevated the undergraduate's level of performance on the FAQ well within the upper range of that typically found in studies of graduate students (74%), while our control group performed significantly less well (68%).

From the present study it remains unknown which specific features of the life-span course are responsible for its beneficial effects on FAQ performance. During the interval between pre- and post-testing these students were lectured, shown films, and did readings pertaining to the aging process. Detailed scrutiny of the relative weights of these components was beyond the scope of the present research design. Post hoc comparisons were possibel, however, to determine whether auxiliary learning in the form of discussion groups or volunteer placement made a difference; it did not. Although one

may have predicted that volunteer placement with the aged would have been superior to the discussion groups option, it is important to keep in mind that the two groups were not matched for previous experience with the aged. It is inappropriate to rule out possible special benefits of direct practical experiences with the aged as a way to improve knowledge about aging.

Previous research has identified five items of the FAQ as particularly troublesome (Palmore, 1980). These frequent misconceptions are that at least 10% of the aged live in long-stay institutions (#7), that most old people are not seldom bored (#16), that over 15% of the U.S. population are age 65 or over (#19), and that most older people have incomes below the poverty level (#21). Our results coincided for four of the five identified items. We did not find number 11 to be a common misconception (defined as an error rate of 60% or greater), but we did find item 24 to be a common misconception ("The majority of old people are seldom irritated or angry"). It is possible that our departure from previous research reflect changing views in society. Now more than before perhaps people see older persons as both less rigid and as more militant or angry.

Post-test scores in our experimental group did not significantly correlate with students' performance on that part of the final exam dealing with aging content. Although counter to our initial expectations, this finding no longer strikes us as odd. In looking over the final exam items it became clear to us that the test was covering areas not covered by the FAQ. For instance, the final tested students' knowledge of such concepts as terminal drop hypothesis, crystallized intelligence, theories of aging, etc.. Secondly, the final exam's format was multiple choice and short essay, while the FAQ used the True or False format. Both these factors could be viewed as lowering the correlation between the final exam and the FAQ scores.

The first point made in the discussion of our results was that people learn what they are taught. This is suggested by our main finding that our experimental group outgained the control group on the FAQ. Item analysis and the lack of a significant correlation between the FAQ and the final exam scores bultress this conclusion. Examining our experimental group's performance on individual FAQ items we judged that accuracy rates were higher for material explicitly covered in class and lower for those items with content we distinctly remember not covering or at least not emphasizing in class. Since the class dealt with a great deal of material on which students were test on the final exam but which did not comprise the FAQ, the failure to find a significant and positive correlation between the measures further suggests that students learn what is taught and do not learn what is not presented.

An important implication raised by the above discussion is that the FAQ as an assessment of level of knowledge about aging is limited to the content covered. How well it predicts over-all or generalized knowledge of aging is an empirical question about which our study does not provide positive evidence. Our findings also raise doubts regarding the validity of the FAQ as a measure of change in over-all level of knowledge about aging. In the typical gerontological training intervention a great deal can be learned that escapes the FAQ assessment, and certain items of the FAQ may test for knowledge not included in the training. There is indirect support for the validity of the FAQ reported by Holtzman & Beck (1980) who showed that better educated persons with presumably more knowledge tend to achieve higher scores on the quiz. More research on the prbdictive or concurrent validity of the FAQ needs to be done using multiple and various external validating criteria.

To obtain full use of the FAQ as an educational assessment tool a number of recommendations are made. It is necessary to periodically re-evaluate the selection of items in order to accommodate to changes in our knowledge about aging and the aged. Factual statistical items are particularly subject to change, and research and intervention is constantly being done that may affect the legitimacy of certain items. The content domain of the FAQ needs to be broadened in order to be more representative of "generalized knowledge" about aging. A greater pool of items can be created and multiple parallel forms of the FAQ can be generated that can be used in repeated test administrations enabling closer monitoring of gerontological training effects. Specific feedback on FAQ performance and even student participation in the creation of additional FAQ items are further educational applications available. With these measures taken fuller use of the FAQ will be possible both in gerontological training and assessment.

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Table 1

Demographic Composition of Experimental and Control Groups

	Experimental group n = 61	Control group n = 61
age range	18 - 44 ($\bar{X}$ = 22.9)	18 - 39 ($\bar{X}$ = 20.7)
Sex		
Male	4	6
Female	57	55
Major		
Nursing	31	12
Home Economics	11	5
Other	18	44
	1 missing	
Classification		
Sophomore	21	36
Junior	23	13
Senior	13	7
Other	4	5

Table 2

Percent of Correct Responses on Pretest and Post Test Items for Experimental (N=61) and Control (N=61) Groups

	Experimental group N=61		Control group N=61	
Item	Pretest	Posttest	Pretest	Posttest
1	100%	100%	98.4%	100%
2	62.3	68.9	57.4	63.9
3	95.1	96.7	98.4	98.4
4	85.2	80.3	57.4	63.9
5	91.8	100	90.2	96.7
6	96.7	95.1	91.8	95.1
7	21.3	67.2	16.4	24.6
8	55.7	70.5	60.7	62.3
9	85.2	85.2	93.4	83.6
10	90.2	95.1	91.8	93.4
11	68.9	62.3	67.2	78.7
12	44.3	75.4	52.5	49.2
13	100	98.4	98.4	98.4
14	97.6	98.4	91.8	88.5
15	88.5	93.4	95.1	95.1
16	29.5	42.6	37.7	31.1
17	49.2	78.7	52.5	67.2
18	62.3	65.6	62.3	62.3
19	3.3	27.9	8.2	14.8
20	62.3	68.9	47.5	52.5

Table 2 (continued)

21	26.2	44.3	27.9	41.0
22	90.2	90.2	86.9	90.2
23	37.7	31.1	45.9	44.3
24	27.9	41.0	31.1	41.0
25	85.2	85.2	75.4	72.1
$\bar{X}$ total correct	66%	74%	65%	68%

Table 3

Raw score means and standard deviations pretest and post test for the experimental and control groups

	Experimental group	Control group
Pretest	$\bar{X}$ = 16.59 S.D. = 2.80	$\bar{X}$ = 16.36 S.D. = 2.58
Posttest	$\bar{X}$ = 18.62 S.D. = 2.85	$\bar{X}$ = 17.06 S.D. = 3.32
	t_{60} = 5.82	t_{60} = -1.77 (n.s.)